



Guidelines for Design and Construction of Grouting for Prestressed Concrete Structures



Japan Prestressed Concrete Engineering Association

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January 2007

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Preface

The Japan Prestressed Concrete Engineering Association (JPCEA) was established in 1958 as a Japanese representation to the International Federation for Prestressing (FIP) with the support from Japan Society of Civil Engineers (JSCE), Architectural Institute of Japan (AIJ), and Japanese Society of Irrigation, Drainage and Reclamation Engineering (JSIDRE), with an attempt to spread and promote prestressed concrete technology through international exchange. The FIP later merged with the Euro-International Concrete Committee (CEB) to form the new International Federation for Structural Concrete (*fib* - *fédération internationale du béton*). The JPCEA and the Japan Concrete Institute (JCI) are participating in *fib*. It was a privilege to hold the first *fib* Congress in Osaka, Japan in October, 2002 which is still fresh in my memory.

The JPCEA has been involved in the development of various draft standards and manuals related to prestressed concrete technology since 1994, through investigations and research conducted by the Prestressed Concrete Technology Standards Committee on the request of organizations related to prestressed concrete.

Recently, the importance of the grouting has become a priority item due to factors such as defective grouting (improper filling) that has resulted in breaking of prestressing steel which can potentially cause serious damage. Hence, it became evident to review the importance of grouting in prestressed concrete structures. As a result, the Japan Prestressed Concrete Contractors Association took the initiative to conduct training courses and revised the "Grout Construction Manual" in order to improve the grouting. Moreover, major revisions of overseas standards, advancements in the grouting materials and development of new products, innovative construction technologies etc., demanded the need for standardization of grout for prestressed concrete structures. As a result, the "Standards Committee for Grouting" was established by JPCEA in July 2003. The Committee consisted of a coordinating group and four working groups with the aim of producing a performance based standard which is the current trend worldwide. This publication titled "*Guidelines for Design and Construction of Grouting for Prestressed Concrete Structures*" was a result of the activities of this standards committee.

The activities of the committee are based on the request and cooperation of Japan Prestressed Concrete Contractors Association and we believe it has fulfilled the required purpose.

I would like to thank all those who contributed to the development of the Guidelines, in particular Prof. Hiroshi Mutsuyoshi, the General Secretary to the Committee and also a Chair for a working group, Professors Yukikazu Tsuji, Junichi Izumo and Toyoaki Miyagawa, Chairs for the working groups and the individual committee members.

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